ACC-905

LEGACY

PROGRAMMING MANUAL For the Legacy ProLine Series Radios

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Part Number: 680-110-2002
October 2001

TABLE OF CONTENTS

TABLE OF CONTENTS i
LIST OF FIGURES iii
INTRODUCTION 1
- **System Requirements** 1
- **Hardware Accessories** 1

HARDWARE INSTALLATION 2
- **Connecting the Legacy Radio** 3

SOFTWARE INSTALLATION 4
- **Making A Backup Copy** 4
- **Installing The Software from Floppy Disk** 4
- **Installing The Software from CD** 4

GETTING STARTED 5
- **Starting the ACC-905** 5
- **To Exit the ACC-905** 5
- **Setting the Communications Port** 5
- **Selecting the Model** 5
- **Radio Version** 5
- **Opening a Personality** 6
- **Saving a Personality** 7
- **Programming a Radio** 8
- **Printing a Personality** 8

SYSTEM OPTIONS 9
- **Scan** 10
- **Time Out Timer** 10
- **Power Save** 11

CHANNEL DATA 12
TWO TONE 14
TONE OPTIONS 17
MENU BAR 20
- **File** 20

TABLE OF CONTENTS

Port **20**
Tool **20**
ICON BAR **21**

LIST OF FIGURES

Figure 1. 25-pin to 9-pin RS-232 Serial Communications Cable 2
Figure 2. ACC-2004 Installation 3
Figure 3: Open File Screen 6
Figure 4: Save Personality 7
Figure 5: Program Screen 8
Figure 6: PL2215P, 2245P, 2415 & 2445 System Options Tab 9
Figure 7: Channel Data Tab 12
Figure 8: Two Tone Tab 14
Figure 9: Channel Tone Option 17
Figure 10: CTCSS table. 17
Figure 11: DCS Table 18
Figure 12: IDCS Table 19
Figure 13: Menu Bar 20
Figure 14: Icon Bar 21

INTRODUCTION

The ACC-905 programming software is used in conjunction with the ACC-2004 programming cable to enable the parameters of the Legacy Proline series handheld radios to be read, modified and printed.

The ACC-905 Software Assembly contains the following items:
3 1/2" Disk Version:
3 diskettes which include programming software and setup program or
1 ACC-905 programming manual (P/N: 680-110-2002)

CD-ROM Version:
1 CD-ROM that contains the programming software and setup program and the ACC-905 programming manual.

System Requirements

The ACC-905 programming software requires an IBM® or compatible computer running Windows® 95 or later.

Computer	486 processor or faster (recommended)
Operating System	Microsoft Windows® 95 environment (Release 2.0 or later)
RAM	8 MB or more (16 recommended)
Hard Disk Space	3 MB
Disk Drive	3.5-inch
Communication Port	One available communications port (COM 1, 2, 3 or 4).

Hardware Accessories

The following Hardware Accessories are required for programming:

- ACC-2004 Programming cable
- 25-pin to 9 pin adapter (if 9-pin port is not available)

Installing The Hardware

Installing the ACC-2004

Make sure that your computer is turned off.

Locate the serial communications port on the computer. This port will usually be located at the rear of the computer. However, since this is dependent upon the design of your computer refer to the computer operator's manual for directions.

The IBM® PC systems support up to four serial ports. There are two physical standards for the serial port configurations of personal computers;

- The first standard is the 25 pin RS-232 output that has a DB-25 male connector at the computer (used on the IBM-PC or PC Compatible). If your computer uses a DB-25 connector, you will need to purchase a DB-9/DB-25 adapter cable from your local computer dealer, but do not use a null-modem adapter.
- The other standard is a 9 pin RS-232 output that has a DB-9 male connector at the computer (used on the IBM-AT and many portable lap-top computers).

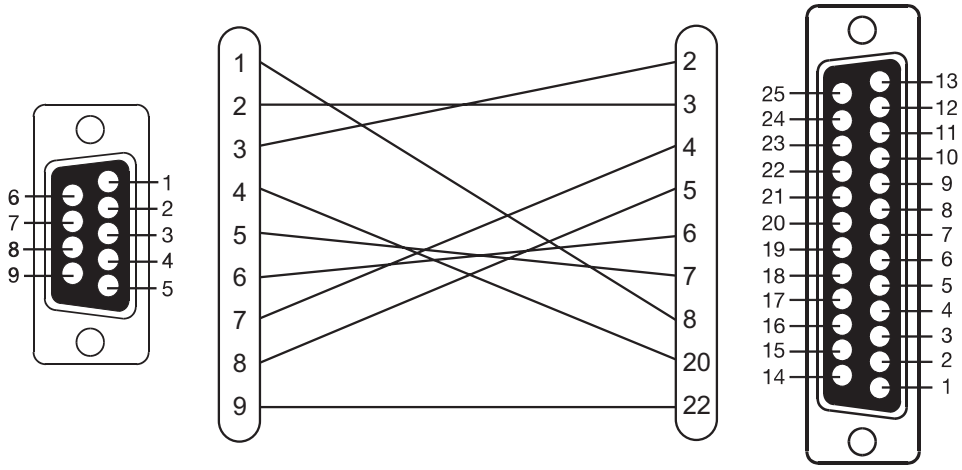


Figure 1. 25-pin to 9-pin RS-232 Serial Communications Cable

Once located, insert the ACC-2004 Programming Cable into the appropriate serial port on the computer.

It is now safe to turn on your computer.

Connecting the Legacy Radio

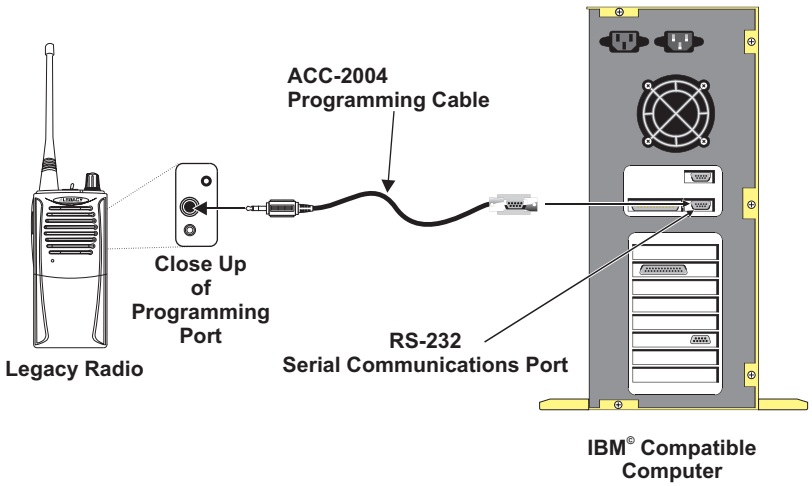


Figure 2. ACC-2004 Installation

Once the ACC-2004 programming cable is connected to the computer, the radio can now be connected to the programming cable.

SOFTWARE INSTALLATION

Making A Backup Copy

(Floppy disk versrion only)

Before installing the ACC-905 Programming Software on your computer, make a backup copy of the disk. The software occupies approximately 5 MB on the disk and can be copied onto four 1.44 MB disks.

To make a copy of a floppy disk using Windows® 95

1. In My Computer, left click the 3 1/2 Floppy (A:) icon for the disk you want to copy.
2. On the File menu, click Copy Disk.
3. Click the drive you want to copy from and the drive you want to copy to, and then click Start.
4. Note: Any existing information on the disk you copy to will be deleted.
5. Use the backup disk in the disk drive as the working disk; keep the original disk in a safe place as a master copy.

Installing The Software from Floppy Disk

Installing Onto A Hard Disk

1. Insert the ACC-905 disk in the disk drive.
2. Click the Start Menu, then select Run... and type: “A:\Legacy PC Programmer.exe” (or appropriate drive).
3. Close the information box by either pressing return or clicking on the “OK” button.
4. The program will automatically install the ACC-905 program in the following directory: C:\Program Files\Programmer

Installing The Software from CD

1. Insert the ACC-905 disk into the CD-ROM drive.
2. If the install program does not auto-start, then: goto the Start Menu
3. Click on Run
4. type D:\Legacy PC Programmer.exe (where D: is your CD-ROM drive)
5. Follow the on-screen instructions.

GETTING STARTED

Starting the ACC-905

In order to use this program, you must be familiar with standard Windows® 95 procedures.

1. From the Windows Start Button, click Programs.
2. Select Programmer > Legacy ACC-905 PC Programmer.
3. The “Opening Window” will appear.

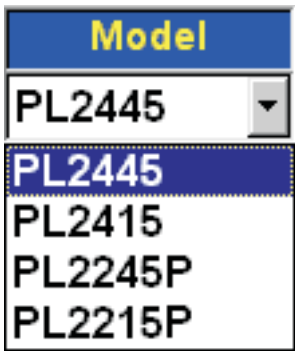
To Exit the ACC-905

Click on the “X” Button located in the upper right corner.

Setting the Communications Port

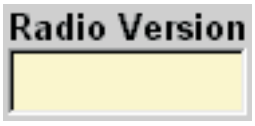
1. Click on Ports (Alt-P) then select the communications port that you are using.

Selecting the Model



1. Click on the Model drop down box.
2. Click on the Model that you would like to program

Radio Version



The radio version indicates the software version inside the radio. This field is read only.

Opening a Personality

1. Click on File then click on Open (Alt-F-O) See “File” on page 20 or click on the Open folder icon see “Open File” on page 21. The screen below will be shown.

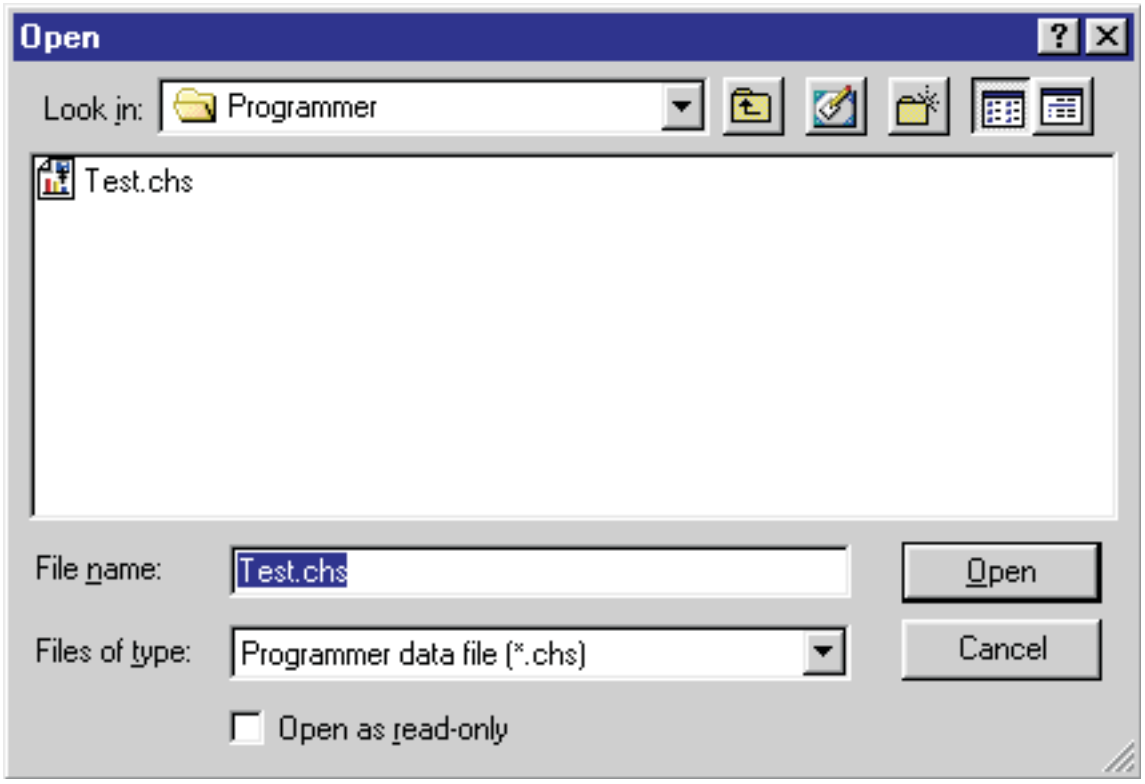


Figure 3: Open File Screen

2. Now select the file or type in the name of the file that you would like to load and click on Open or press Enter.

Saving a Personality

1. Click on File Then Click on Save (Alt-F-S) See “File” on page 20 or click on the Save Icon See “Save File” on page 21. The following screen will appear.

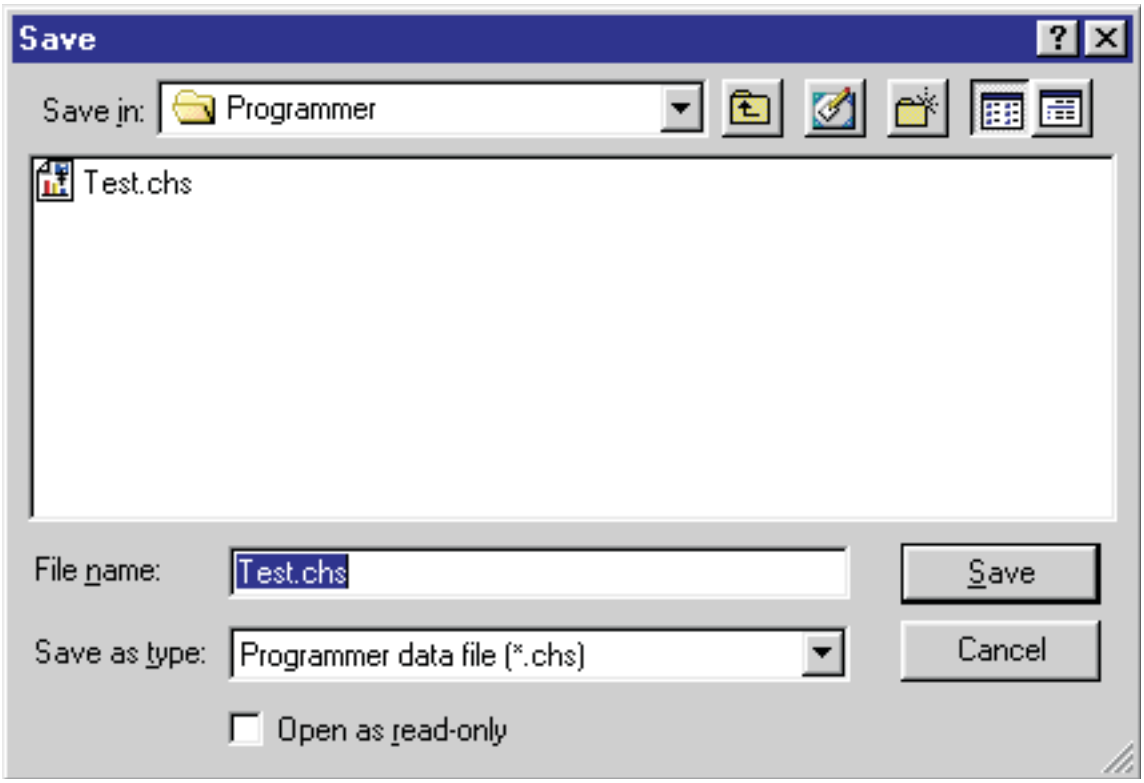


Figure 4: Save Personality

2. Type in the filename that you wish to use then click on Save or press Enter.

Programming a Radio

1. Connect the radio to the computer as shown in “Installing The Hardware” on page 2.
2. Click on Tool then click on Program (Alt-T-P). See “Tool” on page 20. Or click on the program icon. See “Program Radio” on page 21.
3. Follow the instructions on the program screen as shown below.

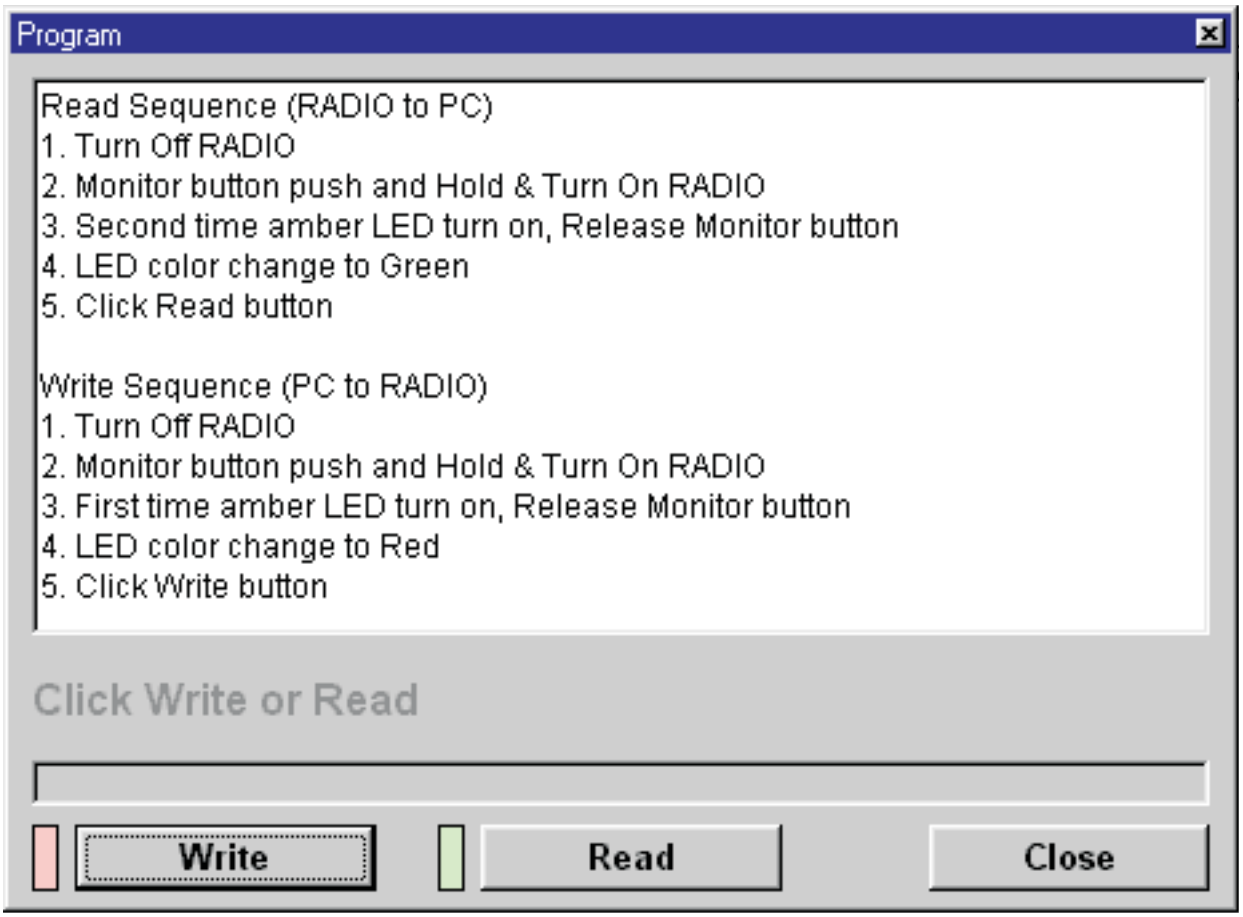


Figure 5: Program Screen

4. Once the radio is in Read or write mode, click on the read or write buttons.

Printing a Personality

A personality can be printed by either selecting File and then selecting Print (Alt-F-P) on the menu bar. See “File” on page 20. Or by selecting the printer icon on the Icon Bar. See “Print Personality” on page 21.

SYSTEM OPTIONS

This tab is where all the radio wide options are set. Settings on this tab will affect every channel of the radio.

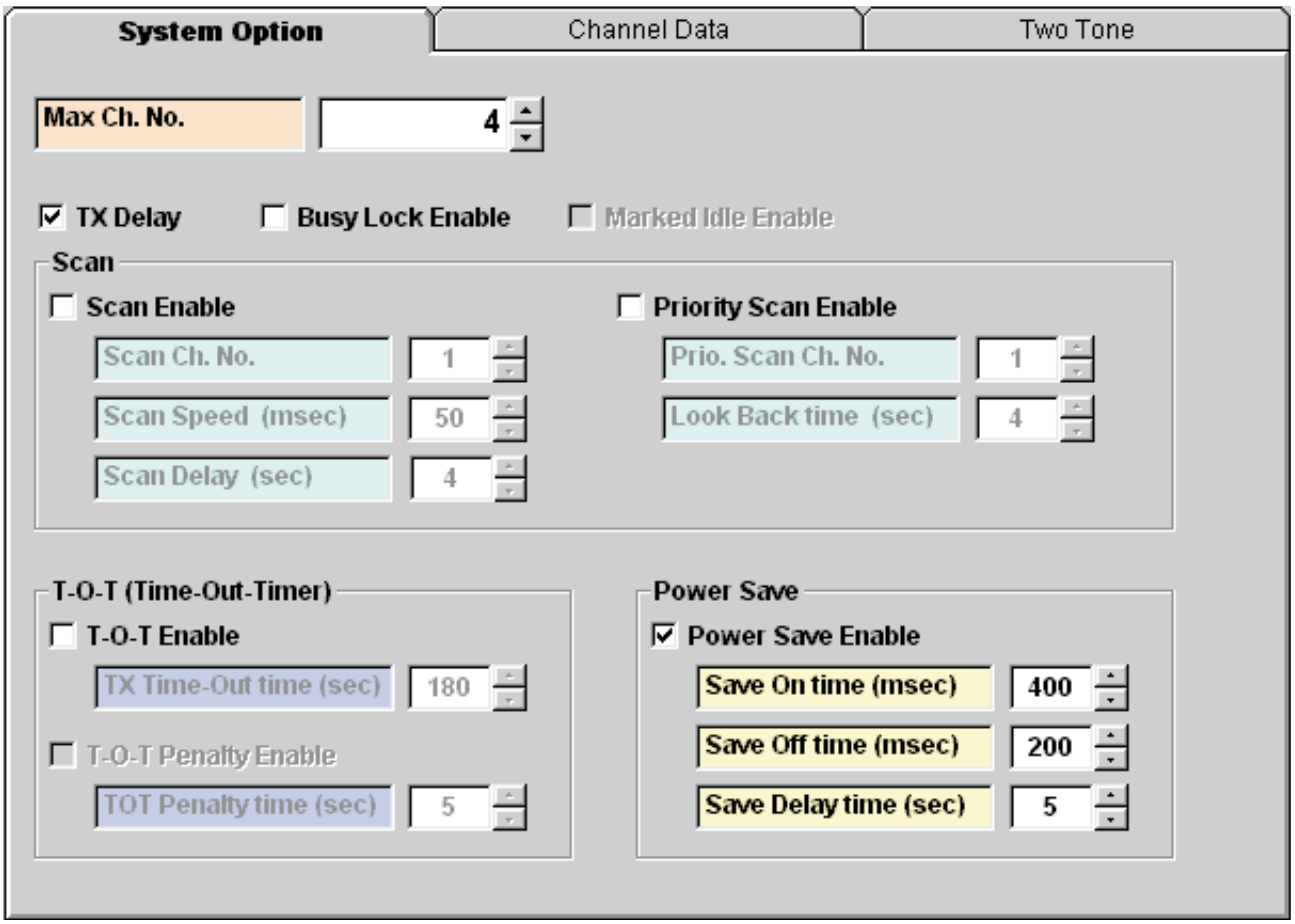


Figure 6: PL2215P, 2245P, 2415 & 2445 System Options Tab

Max Channels

Sets the maximum channels that will be used in the radio. For example, you have a 4 channel radio, but will only program two of those channels. This number will then be set to 2.

TX Delay

Enables the carrier to hang after the PTT has been released. This is useful for eliminating squelch tail when using CTCSS or DCS.

Busy Lock Enable

Busy Lock is used to prevent the radio from transmitting on a busy channel.

Marked Idle Enable

Used in conjuction with Busy Lock Enable, this functions allows the radio to transmit only if the correct carrier and CTCSS or DCS are received.

Scan

The scan section allows for many features to be programmed to tailor the scanning to your needs.

Scan Enable
Enable channel scanning in the radio

Scan Chan Number
The channel that the user selects to enable scanning.

Scan Speed
The amount of time that the radio looks at each channel. This value is set in milliseconds and the default is 50ms. Range is 50ms to 500ms.

Scan Delay
This is the amount of time the the radio will stay on a channel after the carrier has dropped. This value is set in seconds and the default value is 4 seconds. Range 1 to 30 seconds.

Priority Scan Enable
This Enables the radio to scan to a predefined priority channel. All communications on the priority channel will override any communications on any other channel.

- Note: When using priority scan, the radio will look back to the priority channel periodically. The user may respond to a call while the TX delay has not expired (See “TX Delay” on page 9). In order to initiate a call, the user must turn the scan function off by turning the channel selector.

Priority Scan Channel
This is the channel that will be given priority.

Lookback Time
How often the priority channel is looked at. This value is set in seconds and the default is 4 seconds. Range is .5 to 10 seconds.

Time Out Timer

This is a timer that will limit the time that a user can transmit at any one time.

Time Out Timer Enable
This enables the Time Out Timer.

TX Time Out Time
The amount of time that the radio will enable the user to transmit before timing out and turning off the transmitter. This value is set in seconds and the default is 180 seconds. Range is 10 to 2000 seconds.

Time Out Timer Penalty Enable
Once the radio has timed out, this makes the radio wait for a set time before being able to transmit again. This time is set in seconds and the default is 5 seconds. Range is 1 to 100 seconds.

Power Save

This is a battery save feature that makes batteries last longer on a single charge.

Power Save Enable
Enables the Power Save Feature.

Save On Time
This is the amount of time that the receiver is on and looking for calls. This value is set in milliseconds and the default is 400ms. Range is 50 to 2000ms.

Save Off Time
This is the amount of time that the receiver is off and not looking for a call. This value is set in milliseconds and the default is 200ms. Range is 50 to 2000ms.

Save Delay Time
This is the amount of time that the radio will wait after a call has been received before going back into power save mode. Range is .5 to 10 seconds.

CHANNEL DATA

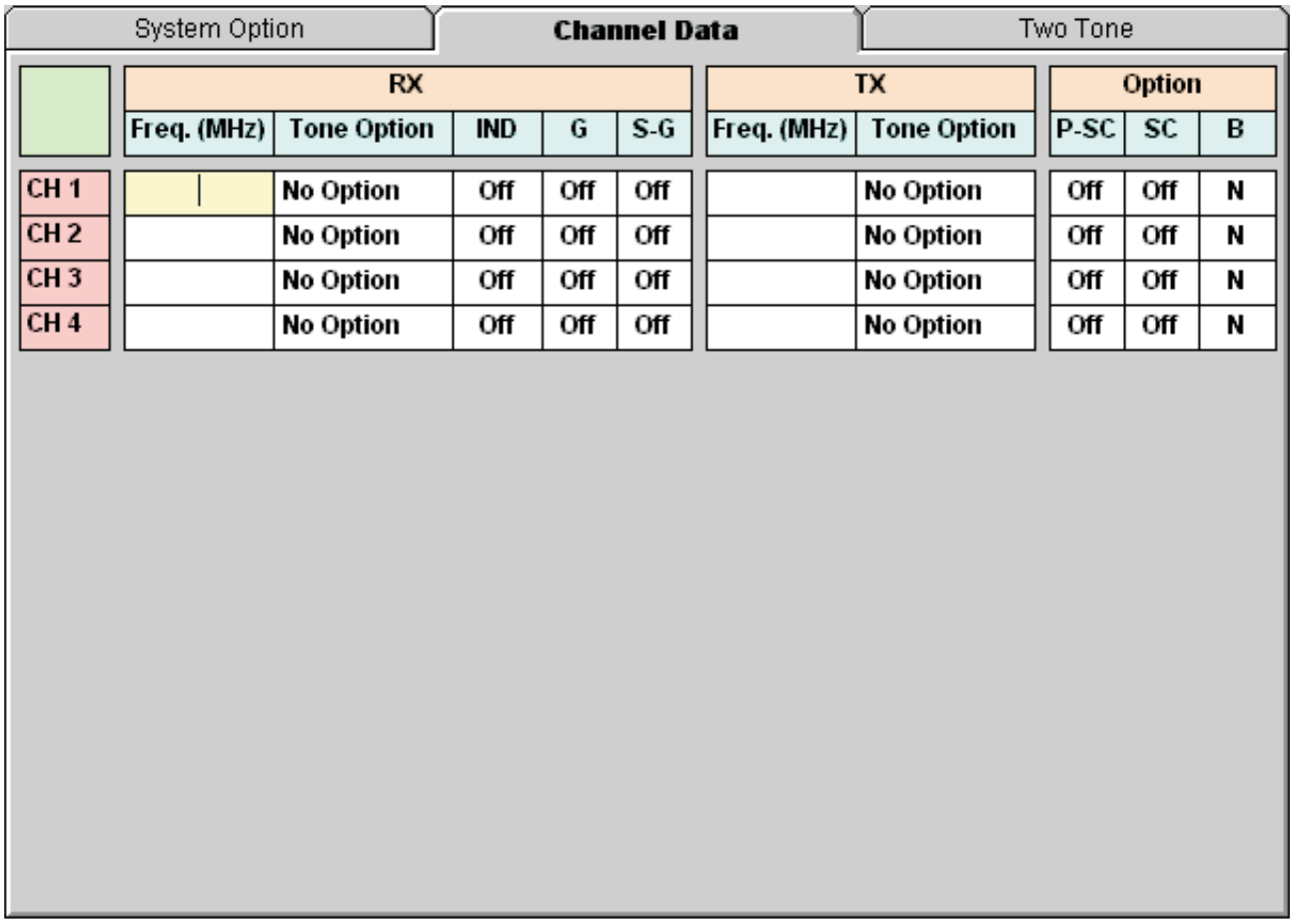


Figure 7: Channel Data Tab

RX

Frequency
The frequency that the radio will receive on. This value is set in MHz.

Tone Option
Allows a CTCSS, DCS or Inverted DCS to be applied to any channel. This enables the user to only hear traffic that pertains to them.

IND
Individual Two Tone option.Allows a two tone option to be used as setup in the two tone tab. See “TWO TONE” on page 14.

G
Group Two Tone option. Allows a group call to be received as setup in the two tone tab. See “TWO TONE” on page 14.

S-G
Super Group Two Tone option. Allows the super group call to be received as setup in the two tone tab. See “TWO TONE” on page 14.

TX

Frequency
The frequency that the radio will transmit on. This value is set in MHz.

Tone Option
Allows a CTCSS, DCS or Inverted DCS to be used during transmit. See “TONE OPTIONS” on page 17.

Option

P-SC
Priority Scan Option. This works in conjunction with the Priority Scan Channel feature in the System Option tab. In order for priority scan to work, this field should be set too On for the channels that will lookback to the priority channel.

SC
Channel Scan. Setting this option to On will put the selected channel in the scan list.

B
Band Option. Setting this option to N will make the selected channel to 12.5KHz channel spacing. When this is set to S, the channels spacing will be 25KHz.

TWO TONE

This tab is for setting up the two tone options for the radio.

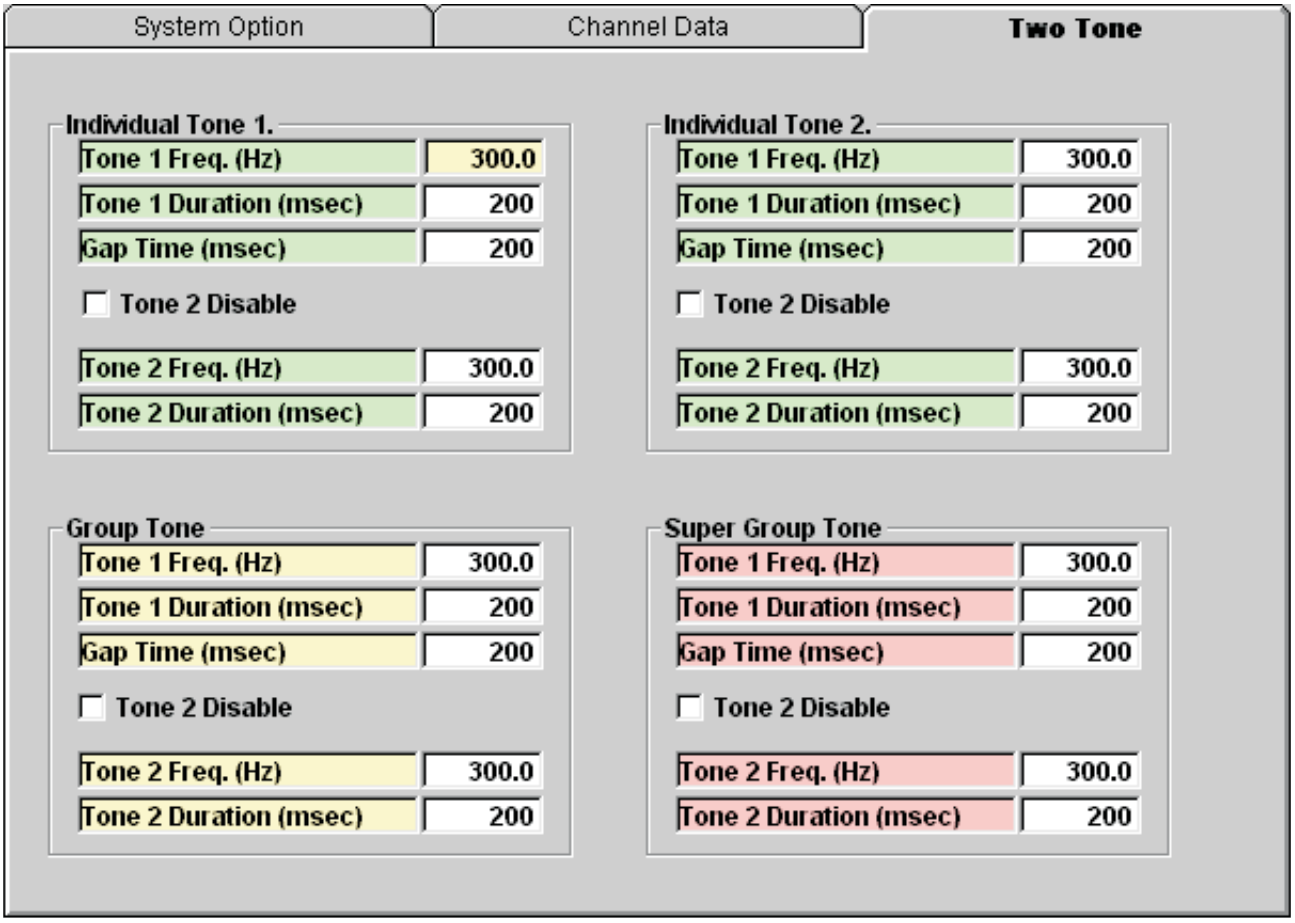


Figure 8: Two Tone Tab

Individual Tone 1

This is the first two tone sequence. This coincides with the Tone 1 on the Channel Data Tab. See “IND” on page 12.

- Note: When using two tone on a channel, the Tone Option should be set to ‘No Option’. See “Tone Option” on page 12.

Tone 1 Frequency
This is the actual frequency of the first tone in hertz. Range is 300 to 3000 Hz.

Tone 1 Duration
How long tone 1 will be sent in milliseconds. Range is 100 to 10000ms.

Gap Time
Time between tone 1 and tone 2 in milliseconds.Range is 100 to 10000ms.

Tone 2 Disable
Disables tone 2.

Tone 2 Frequency
This is the actual frequency of the second tone in hertz. Range is 300 to 3000Hz.

Tone 2 Duration
How long tone 2 will be sent in milliseconds. Range is 100 to 10000ms.

Individual Tone 2

This is the second two tone sequence. This coincides with the Tone 2 on the Channel Data Tab. See “IND” on page 12.

Tone 1 Frequency
This is the actual frequency of the first tone in hertz. Range is 300 to 3000Hz.

Tone 1 Duration
How long tone 1 will be sent in milliseconds. Range is 100 to 10000ms.

Gap Time
Time between tone 1 and tone 2 in milliseconds. Range is 100 to 10000ms.

Tone 2 Disable
Disables tone 2.

Tone 2 Frequency
This is the actual frequency of the second tone in hertz. Range is 300 to 3000Hz.

Tone 2 Duration
How long tone 2 will be sent in milliseconds. Range is 100 to 10000ms.

Group Tone

This is the group call feature to call a group of radios. This coincides with the group call feature on the Channel Data Tab. See “G” on page 12.

Tone 1 Frequency
This is the actual frequency of the first tone in hertz. Range is 300 to 3000Hz.

Tone 1 Duration
How long tone 1 will be sent in milliseconds. Range is 100 to 10000ms.

Gap Time
Time between tone 1 and tone 2 in milliseconds. Range is 100 to 10000ms.

Tone 2 Disable
Disables tone 2.

Tone 2 Frequency
This is the actual frequency of the second tone in hertz. Range is 300 to 3000Hz.

Tone 2 Duration
How long tone 2 will be sent in milliseconds. Range is 100 to 10000ms.

Super Group Tone

This is a second form of group call that will allow a group of radios to be called. This coincides with the Super Group Feature on the Channel Data Tab. See “S-G” on page 12.

Tone 1 Frequency
This is the actual frequency of the first tone in hertz. Range is 300 to 3000Hz.

Tone 1 Duration
How long tone 1 will be sent in milliseconds. Range is 100 to 10000Hz.

Gap Time
Time between tone 1 and tone 2 in milliseconds. Range is 100 to 10000Hz.

Tone 2 Disable
Disables tone 2.

Tone 2 Frequency
This is the actual frequency of the second tone in hertz. Range is 300 to 3000Hz.

Tone 2 Duration
How long tone 2 will be sent in milliseconds. Range is 100 to 10000Hz.

TONE OPTIONS

Tone Options can be set for Transmit and Receive on the Channel Data Screen. See “CHANNEL DATA” on page 12.

When Tone Option is clicked on with the left mouse button or the Enter key is pressed while in the Tone Option field the following screen is shown.

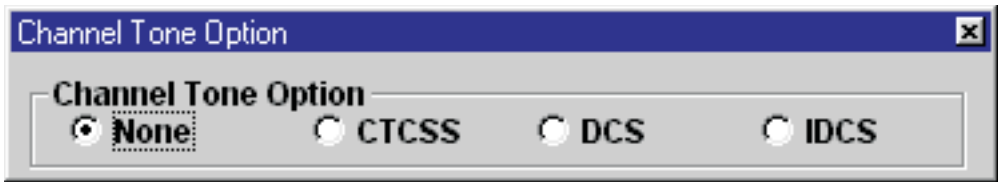
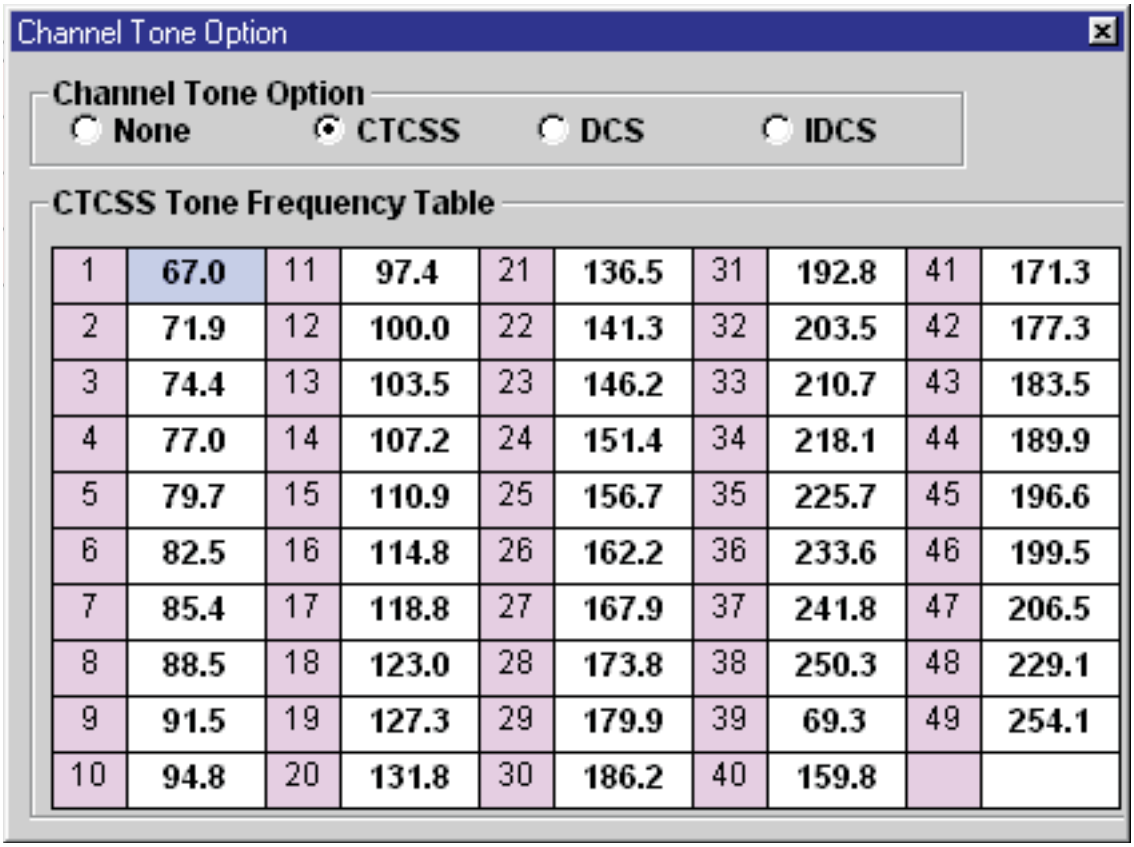


Figure 9: Channel Tone Option

The options allowed are:

- None- No tone or Carrier Squelch
- CTCSS - Continuous Tone Coded Squelch System
- DCS - Digital Coded Squelch
- IDCS - Inverted Digital Coded Squelch

CTCSS



1	67.0	11	97.4	21	136.5	31	192.8	41	171.3
2	71.9	12	100.0	22	141.3	32	203.5	42	177.3
3	74.4	13	103.5	23	146.2	33	210.7	43	183.5
4	77.0	14	107.2	24	151.4	34	218.1	44	189.9
5	79.7	15	110.9	25	156.7	35	225.7	45	196.6
6	82.5	16	114.8	26	162.2	36	233.6	46	199.5
7	85.4	17	118.8	27	167.9	37	241.8	47	206.5
8	88.5	18	123.0	28	173.8	38	250.3	48	229.1
9	91.5	19	127.3	29	179.9	39	69.3	49	254.1
10	94.8	20	131.8	30	186.2	40	159.8		

Figure 10: CTCSS table

The CTCSS Table allows for 1 of 49 tones to be selected.

DCS

Channel Tone Option

Channel Tone Option: None | CTCSS | DCS | IDCS

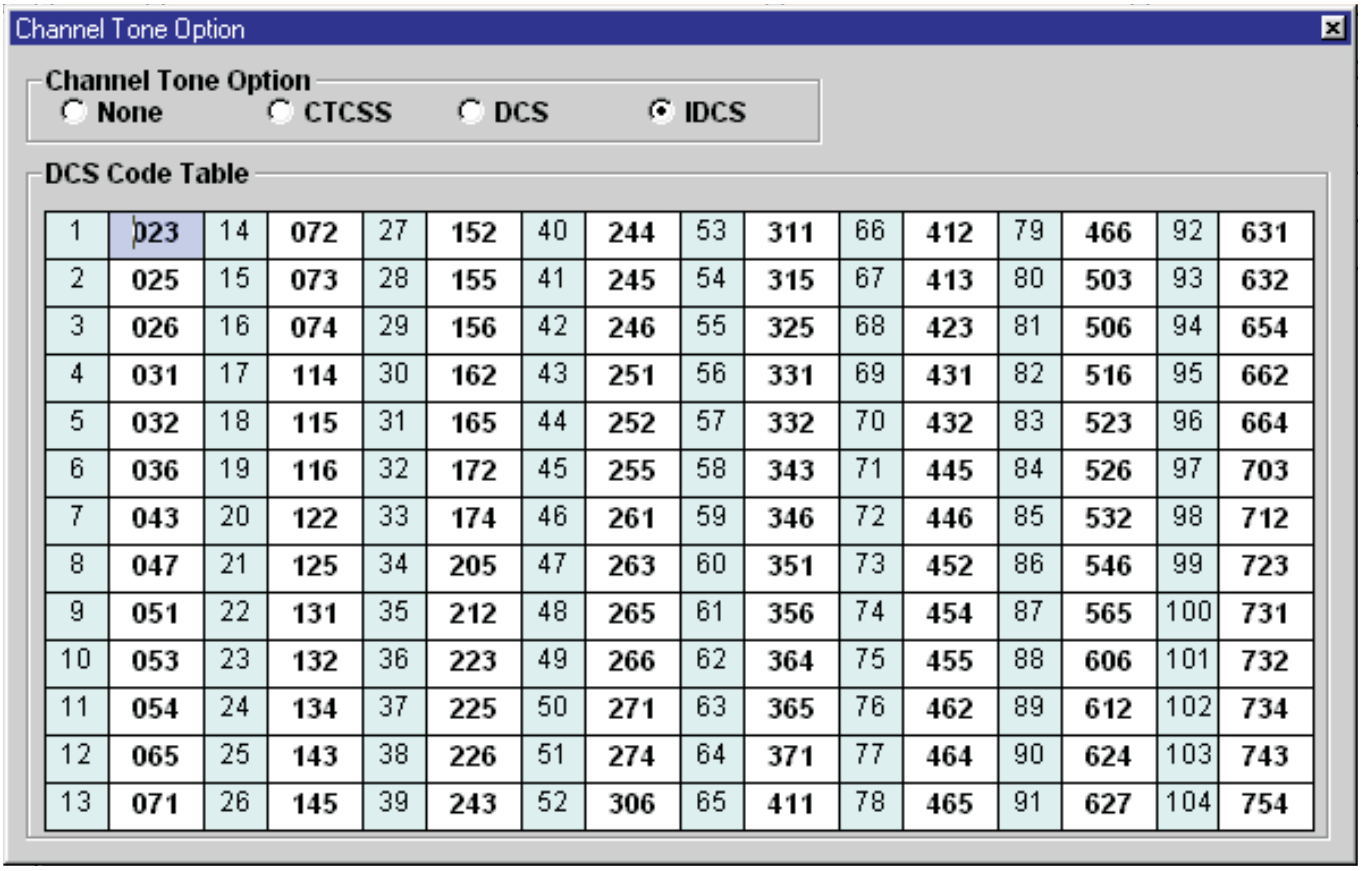
DCS Code Table

1	023	14	072	27	152	40	244	53	311	66	412	79	466	92	631
2	025	15	073	28	155	41	245	54	315	67	413	80	503	93	632
3	026	16	074	29	156	42	246	55	325	68	423	81	506	94	654
4	031	17	114	30	162	43	251	56	331	69	431	82	516	95	662
5	032	18	115	31	165	44	252	57	332	70	432	83	523	96	664
6	036	19	116	32	172	45	255	58	343	71	445	84	526	97	703
7	043	20	122	33	174	46	261	59	346	72	446	85	532	98	712
8	047	21	125	34	205	47	263	60	351	73	452	86	546	99	723
9	051	22	131	35	212	48	265	61	356	74	454	87	565	100	731
10	053	23	132	36	223	49	266	62	364	75	455	88	606	101	732
11	054	24	134	37	225	50	271	63	365	76	462	89	612	102	734
12	065	25	143	38	226	51	274	64	371	77	464	90	624	103	743
13	071	26	145	39	243	52	306	65	411	78	465	91	627	104	754

Figure 11: DCS Table

The DCS table allows for 1 of 104 DCS codes to be selected.

IDCS



1	023	14	072	27	152	40	244	53	311	66	412	79	466	92	631
2	025	15	073	28	155	41	245	54	315	67	413	80	503	93	632
3	026	16	074	29	156	42	246	55	325	68	423	81	506	94	654
4	031	17	114	30	162	43	251	56	331	69	431	82	516	95	662
5	032	18	115	31	165	44	252	57	332	70	432	83	523	96	664
6	036	19	116	32	172	45	255	58	343	71	445	84	526	97	703
7	043	20	122	33	174	46	261	59	346	72	446	85	532	98	712
8	047	21	125	34	205	47	263	60	351	73	452	86	546	99	723
9	051	22	131	35	212	48	265	61	356	74	454	87	565	100	731
10	053	23	132	36	223	49	266	62	364	75	455	88	606	101	732
11	054	24	134	37	225	50	271	63	365	76	462	89	612	102	734
12	065	25	143	38	226	51	274	64	371	77	464	90	624	103	743
13	071	26	145	39	243	52	306	65	411	78	465	91	627	104	754

Figure 12: IDCS Table

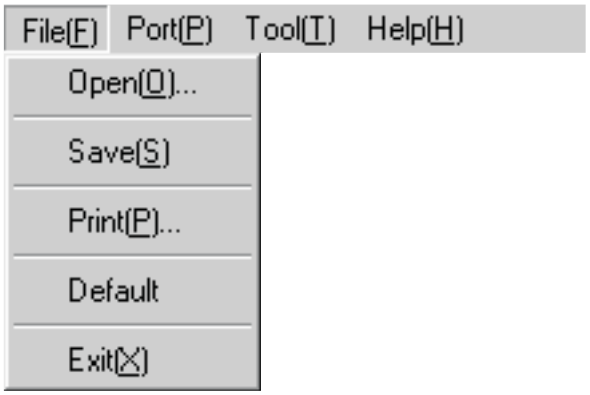
This table allows 1 of 104 Inverted-DCS codes to be selected.

MENU BAR

Figure 13: Menu Bar

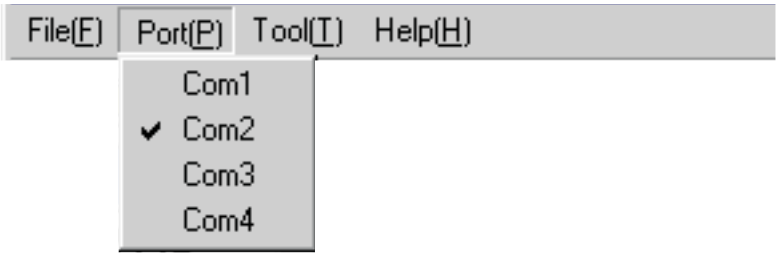
The menu bar is provided to allow easy navigation from anywhere within the program. The menu bar consists of pull down menus that allow the user to go directly from one function to another. Options can be selected by using the Alt- key combinations listed.

File



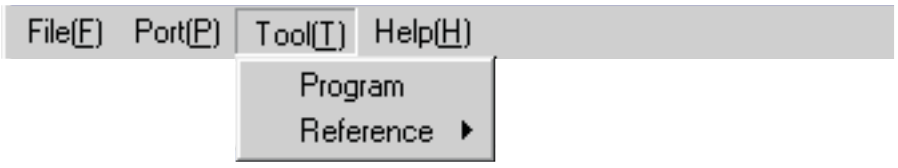
The File menu is used to set the screen to Defaults, Exit the program or to Open, Save or Print a personality.

Port



When the ACC-905 is executed, the serial port is set to COM1 by default. If you have connected the radio to COM2, then COM2 should be selected in this menu.

Tool



Tool is used to Program the radio or to change reference settings (Password required). By default Reference Settings are set to auto.

ICON BAR

Figure 14: Icon Bar

The Icon bar allows for easy access to the most used functions.

Open File

Loads personality from disk.

Save File

Saves personality to disk.

Print Personality

Prints current personality to the printer.

Program Radio

Reads personality from radio or writes personality to radio.